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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: OIL GELS OF CONTROLLED DISTRIBUTION BLOCK COPOLYMERS AND ESTER OILS

(57) Abstract: The present invention relates to oil gel compositions that include at least one non-aromatic ester oil and an anionic block copolymer of a mono alkenyl and a conjugated diene. The block copolymer is selectively hydrogenated and has mono alkenyl arene end blocks and a controlled distribution block of a mono alkenyl arene and a conjugated diene midblock. The ester oil is a non-aromatic, ester compound such as soybean oil, rapeseed oil, and other like compounds.

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A. CLASSIFICATION OF SUBJECT MATTER
INV. C08L53/02 C08F297/04

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
C08L C08F C09D C09J

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 03/066696 A (KRATON POLYMERS RESEARCH B.V; HANDLIN, DALE, L. JR; WILLIS, CARL, L; B) 14 August 2003 (2003-08-14) claims 1-9 page 17, line 38 - page 18, line 1 page 23, line 12 page 21, lines 3-15 abstract page 21, line 30 page 23, line 30 - page 24, line 9; examples page 3, line 7 - page 21, line 15 -----	1-12,17, 18,22,23

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[X] Further documents are listed in the continuation of Box C.

[X] See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
1 June 2006	06 -10- 2006

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Hammond, Andrew

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International application No
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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 03/066731 A (KRATON POLYMERS RESEARCH B.V; HANDLIN, DALE, L. JR; WILLIS, CARL, L; C) 14 August 2003 (2003-08-14) page 5, line 6 page 2, lines 1-14 page 1, lines 21,22 page 15, line 16 page 15, line 20 page 5, line 13 - page 12, line 11 abstract page 13, lines 25-27; examples -----	1-12,17, 18,22,23
X	WO 03/066697 A (KRATON POLYMERS RESEARCH B.V; HANDLIN, DALE, L. JR; WILLIS, CARL, L; C) 14 August 2003 (2003-08-14) page 4, lines 12,13 page 2, line 5 page 8, lines 8-10 page 12, line 14 page 1, lines 21,22 page 4, line 21 - page 9, line 24 abstract page 11, lines 10-12; examples -----	1-12,17, 18,22,23
X	US 2003/181585 A1 (HANDLIN, JR. ET AL) 25 September 2003 (2003-09-25) paragraph [0013] paragraph [0029] paragraph [0032] paragraph [0036]; examples -----	1-12,17, 18,22,23
Y	US 2003/153681 A1 (ST. CLAIR ET AL) 14 August 2003 (2003-08-14) abstract paragraphs [0008] - [0029] -----	1-12,17, 18,22,23
P,Y	WO 2005/095513 A (KRATON POLYMERS RESEARCH B.V; ST. CLAIR, DAVID, J) 13 October 2005 (2005-10-13) page 1, lines 17,18 page 11, lines 1,2 page 10, line 4 page 5, line 23; claim 4 page 14, line 32 -----	1-12,17, 18,22,23
A	WO 03/066769 A (KRATON POLYMERS RESEARCH B.V; HANDLIN, DALE, L., JR; WILLIS, CARL, L;) 14 August 2003 (2003-08-14) abstract page 4, line 9; claim 9 -----	1-12,17, 18,22,23

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International application No
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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 822 227 A (SHELL INTERNATIONALE RESEARCH MAATSCHAPPIJ B.V; KRATON POLYMERS RESEAR) 4 February 1998 (1998-02-04) claim 1 page 2, line 35 - page 3, line 41 abstract -----	1-12,17, 18,22,23
A	GB 2 168 991 A (* SHELL INTERNATIONALE RESEARCH MAATSCHAPPIJ BV) 2 July 1986 (1986-07-02) abstract; claims 1-4 -----	1-12,17, 18,22,23
A	US 5 879 694 A (MORRISON ET AL) 9 March 1999 (1999-03-09) abstract column 3, line 49 - column 4, line 43 -----	1-12,17, 18,22,23

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2006/008235

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1 - 12, 17 - 18, 22 - 23

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest.

☐ No protest accompanied the payment of additional search fees.

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-12,17-18,22-23

   An oil gel composition comprising at least one hydrogenated block copolymer and a non-aromatic ester oil or mixture of non-aromatic ester oils, as described in the application claim 1.
   Later claims further define specific block copolymer structures and component configurations, as well as application claim 12 further specifically defining specific formulae for the ester oil compound.

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2. claim: 13

   A further oil gel composition comprising another further specific formula for the ester oil compound.

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3. claim: 14

   A further oil gel composition comprising another further specific formula for the ester oil compound.

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4. claim: 15

   A further oil gel composition comprising another further specific formula for the ester oil compound.

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5. claim: 16

   A further oil gel composition comprising other further specific ester oil compounds.

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6. claims: 19,24

   An oil gel composition of the specific hydrogenated block copolymer and ester oil compounds as described in the application claim 19.

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7. claims: 20-21

   A further oil gel composition of the specific hydrogenated block copolymer and ester oil compounds as described in the application claim 20.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
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